REMARKS

Status of case

Claims 1-2, 5-28, and 33-43 are currently pending.

Rejections under 35 U.S.C. § 103(a)

Claims 1, 2, 5, 7, 16, 18, 33-34, 37, and 41 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,862,228 to Davis ("the Davis reference") in view of Admitted Prior Art ("APA"). Claims 6, 8-15, 17, 19-28, 38-40, and 42-43 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Davis reference in view of APA and further in view of U.S. Patent 5,787,480 to Griesinger ("the Griesinger reference"). Claim 35 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Davis reference in view of APA and further in view of U.S. Patent 5,757,927 to Gerzon ("the Gerzon reference"). Claim 35 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Davis reference in view of APA and further in view of U.S. Patent 5,307,415 to Fosgate ("the Fosgate reference").

Applicants respectfully contend that the claims as currently presented are patentable over the cited art.

1. The Davis Reference fails to teach producing an input signal pair "being based on at least one of the audio input signals from a different location"
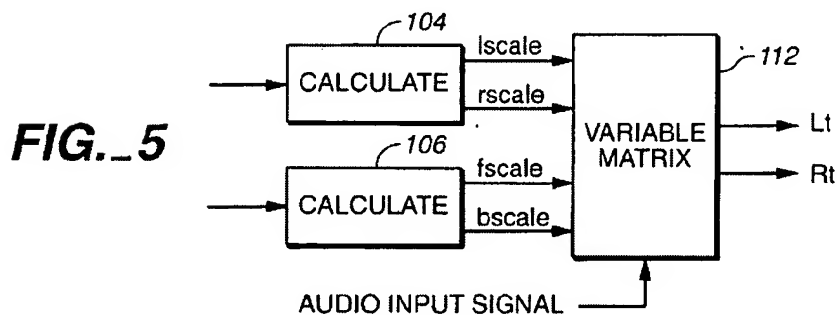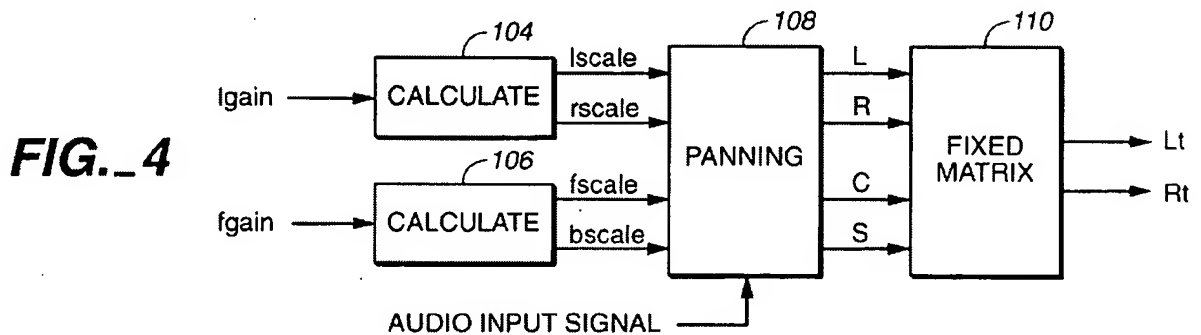
The Office Action states that the Davis reference teaches an input mixer producing an input signal pair, citing Lt' and Rt'. The Office Action further states that Lt' and Rt' are producing using "Lt, Rt, Lt1/Rt1 through Ltn/Rtn," which are "directed to different locations in the environment (to audio transducers, not shown; col. 4, lines 32-47)." For reference, applicants reproduce below col. 4, lines 32-47 of the Davis reference:

> An overview of the environment in which the audio matrix encoder of the present invention operates is shown in FIGS. 3, 4, and 5. In FIG. 3, pre-recorded Lt and Rt matrix-encoded audio signals are applied to a linear mixer 102. Other inputs to the mixer include one or more pairs of matrix-encoded audio signals Lt1/Rt1 through Ltn/Rtn. In the preferred environment of the invention, each of the latter inputs represents the spatial encoding of a single audio signal. The output of the mixer 102 is a single pair of matrix-encoded audio signals, Lt' and Rt', representing the linear sum of Lt and Lt1 through Ltn and the linear sum of Rt and Rt1 through Rtn, respectively. The mixer outputs Lt' and Rt' are then decoded in an audio matrix decoder 104 and applied to audio transducers (not shown) for playback. Neither the decoder, the audio transducers nor the mixer form a part of the present invention.

Applicants further produce additional in the Davis reference:

> In the principal application for the encoder, the Lt and Rt signals of the encoder are mixed with the Lt and Rt signals of a pre-recorded source (e.g., computer game soundtrack, CD ROM, Internet audio, etc.). Abstract

> In the preferred environment, the control inputs are generated by a computer and a computer program in response to manual inputs by a computer user (the user, for example, playing a computer game or a CD ROM or interacting with a site or other users on the Internet). The computer and computer program also generate the input audio signal (alternatively, the real time audio signal may be derived from another source). A set of two scaling factors (lscale and rscale) are calculated by calculate functions 104 and 106 from the lgain input and another set of two scaling factors (fscale and bscale) are calculated from the fgain input. The four scaling factors are then applied to a panner 108 which also receives the input audio signal. The panner 108 controls the relative levels of the audio signal applied to each of four inputs of a fixed audio matrix 110.

FIG._4

FIG._5

As shown in the above-excerpts, it is apparent that the input signal pairs are not directed to different locations in the environment. By design, the Davis reference teaches that the various Lt and Rt signals are for the same locations, but merely from different sources. For example, one of the Lt and Rt signals is from the encoder, a second Lt and Rt signal is from a computer game soundtrack, etc. Of note, the Davis reference merely has duplicates of the same type of signal, but merely from different inputs. In this way, the Davis reference wishes to combine different

sources of the same type of signal. This is significantly different from the present limitation as claimed. See claims 1, 2, and 41.

2.   The Office Action mistakenly asserts that it would have been obvious to produce a plurality of input signal pairs

The Office Action acknowledges that the Davis reference fails to teach or even suggest producing a plurality of input signal pairs. See claims 1, 2, and 41. Specifically, the Davis reference only teaches that a single pair of signals (Lt, Rt) is produced. The Office Action then states the following:

> it would have been obvious to one having ordinary skill in the art at the time of the invention was made to produce the plurality of input signal pairs by duplicating the mixer such that to obtain the plurality of input signal pairs for multiple effect.

As an initial matter, the Office Action provides no citation to any reference in its conclusion that it would have been obvious. Moreover, the Office Action states that it would have been obvious to obtain the plurality of input signal pairs "for multiple effect." Applicants strongly request the Examiner to provide the basis for the supposed motivation for "multiple effect." Specifically, Applicants request, without the benefit of hindsight, where in the Davis reference this "multiple effect" is present. Applicants respectfully contend that the "multiple effect" in the Davis reference is lacking and therefore cannot provide the supposed motivation without the improper benefit of hindsight. In fact, the Davis reference teaches the opposite to that claimed. Specifically, the Davis reference teaches that multiple inputs from various sources, such as an encoded Lt and Rt, a computer game soundtrack Lt and Rt, CD ROM Lt and Rt, Internet audio Lt and Rt, etc. are combined into a **single** input pair, and not input multiple input pairs.

3.   The Office Action mistakenly asserts admitted prior art (APA) as teaching the invention

The Office Action acknowledges that the Davis reference fails to teach or even suggest a decoder comprising a plurality of audio input signals being directed to different locations. The Office Action then states the following:

> APA disclose "an input signal pair may be created for use by known matrix decoding techniques determining one or more steering angles (the "steering angle input pair" or "SAIP")," see Specification, page 22; and "The matrix decoder 736 including rear and side outputs; may be a known active matrix decoder such as LOGIC 7®, DOLBY PRO LOGIC®, or the like," See Specification, page 26; Figure 7.

The Office Action is seriously misinterpreting the statement in the application. As an initial matter, the statement was presented in the detailed description of the application, and not the

background of the invention. Moreover, the reference to the "known matrix decoding techniques" including "LOGIC 7®, DOLBY PRO LOGIC®, or the like," relates to using a matrix decoder to generate multiple **OUTPUT** signals (such as left front output, right front output, etc.) The statement cited in the Office Action does not proffer any admission regarding providing **input signal pairs** as an input to a matrix decoder. Rather, the statement is a general one directed to the ability to decode an input signal into multiple output signals. Therefore, Applicants strongly contend that the basis under which the claims were rejected is factually incorrect.

Claims 12 and 23

The Office Action acknowledges that the prior art references do not teach the limitations as cited. Yet, the Office Action merely states the following: "Nevertheless, such an implementation is well known in the prior art. (Official notice taken)." As stated in the MPEP, "Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known." MPEP §2144.03. Applicants respectfully contend that the facts taken as well known in the prior art are not "capable of instant and unquestionable demonstration as being well known." Moreover, the claim recites "at least one of the signals in the rear input signal pair". As discussed above, there is no teaching of any creation of a rear input signal pair, let alone using the equation recited in claims 12 and 23. Applicants thus respectfully request the withdrawal of the unsupported rejection.

Claim 37

The Office Action rejected claim 37 as obvious based on the Davis reference and admitted prior art. The Office Action reasoned as follows:

> Regarding **claim 37**, Davis in view of APA teaches the decoder module of Claim 1. Davis as modified, further teaches where the plurality of audio input signals comprises n signals (two: Lt and Rt, see Fig. 3), and
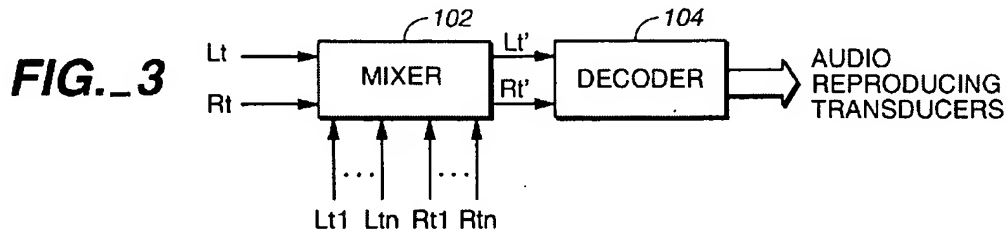
> where the input mixer produces m (two: Lt' and Rt', see Fig. 3) input signal pairs, where m*2 (equals 4) is greater than n (i.e., two).

For convenience, the entirety of claim 37 is reproduced below:

> 37. (Previously Presented) The decoder module of Claim 1, where the plurality of audio input signals comprises n signals, and

> where the input mixer produces m input signal pairs, where m*2 is greater than n.

The Office Action is mistaken in two respects. First, the Office Action misinterprets the "n signals." The Office Action states that there are 2 input signals in the Davis references. This is incorrect. As shown in Fig. 3 of the Davis reference (reproduced below), there are more than 2 input signals:

FIG._3

Specifically, there are $Lt + Rt + Lt1 \ldots Ltn + Rt1 \ldots Rtn$. Thus, there are significantly more input signals than the 2 stated in the Office Action.

Second, the Office Action misinterprets the "m input signal pairs." The Office Action states that $m = 2$ (counting Lt' and Rt'). However, the claim recites "m input signal pairs". Thus, the Davis reference, at best, only teaches one (1) input signal pair. Therefore, the rejection of claim 37 is clearly erroneous on its face.

SUMMARY

Applicant respectfully requests the Examiner to grant early allowance of this application. The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,

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